

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
BUREAU OF STANDARDS FOR FISCAL YEAR 1986, AND
FOR OTHER PURPOSES

APRIL 16, 1985.—Committed to the Committee of the Whole House on the State of the
Union and ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology,
submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 1617]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 1617) to authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal years 1986 and 1987 and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

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The amendments are as follows:

Strike everything after the enacting clause and insert in lieu thereof the following:

That this Act may be cited as the "National Bureau of Standards Authorization Act for Fiscal Year 1986".

AUTHORIZATIONS FOR PROGRAM ACTIVITIES

SEC. 2. (a) There are authorized to be appropriated to the Secretary of Commerce (hereinafter referred to as the "Secretary") for fiscal year 1986, to carry out activities performed by the National Bureau of Standards, the sums set forth in the following line items:

- (1) Measurement Research and Standards, \$39,985,000.
- (2) Materials Science and Engineering, \$23,184,000.
- (3) Engineering Measurements and Standards, \$34,846,000.
- (4) Computer Science and Technology, \$10,000,000.
- (5) Center for Fire Research, \$5,827,000.
- (6) Technical Competence Fund, \$8,745,000.
- (7) Central Technical Support, \$9,368,000.
- (8) Cold Neutron Source Facility, \$8,000,000.

(b) Notwithstanding any other provision of this or any other Act for fiscal year 1986—

- (1) of the total amount authorized under paragraph (2) of subsection (a), not less than \$2,500,000 shall be available for steel technology;
- (2) of the total amount authorized under paragraph (3) of subsection (a), not less than \$3,895,000 shall be available for the Center for Building Technology, and not less than \$3,000,000 shall be available for Robotics;
- (3) of the total of the amounts authorized under paragraphs (1), (2), (7), and (8) of subsection (a), not less than \$5,608,000 shall be available for transfer to the Working Capital Fund; and
- (4) of the total of the amounts authorized under paragraphs (1), (2), and (3) of subsection (a), not less than \$3,000,000 shall be available for an Evaluated Engineering Data Base.

(c)(1) Funds may be transferred among the line items listed in subsection (a) so long as the net funds transferred to or from any line item do not exceed 10 percent of the amount authorized for that line item in such subsection.

(2) In addition, the Secretary may propose transfers to or from any line item exceeding 10 percent of the amount authorized for that line item in subsection (a); but a full and complete explanation of any such proposed transfer and the reason therefor must be transmitted in writing to the Speaker of the House of Representatives, the President of the Senate, and the appropriate authorizing committees of the House of Representatives and the Senate, and the proposed transfer may be made only when 30 calendar days have passed after the transmission of such written explanation.

(3) No transfer described in paragraph (1) or (2) may have the effect of reducing the amount available for any of the particular purposes set forth in subsection (b) below the applicable dollar amount specified in that subsection.

(d) The National Bureau of Standards shall seek reimbursements of not less than \$500,000 from other Federal Agencies to expand its efforts in support of basic scientific research on the atmospheric, climatic, and environmental consequences of nuclear explosions and nuclear exchanges.

AUTHORIZATION FOR EXPENSES OUTSIDE THE UNITED STATES

SEC. 3. In addition to the sums authorized in section 2, there is authorized to be appropriated to the Secretary for fiscal year 1986 the sum of \$600,000 for expenses of the National Bureau of Standards incurred outside the United States, to be paid for in foreign currencies that the Secretary of the Treasury determines to be excess to the normal requirements of the United States.

AUTHORIZATION FOR SALARY ADJUSTMENTS

SEC. 4. In addition to the sums authorized in the preceding provisions of this Act, there are authorized to be appropriated to the Secretary for fiscal year 1986 such additional sums as may be necessary to restore the salary, pay, retirement, and other employee benefits of the National Bureau of Standards to the levels in effect at the end of fiscal year 1985 and to make any adjustments in the Bureau's salary, pay, retirement, and other employee benefits which may be provided for by law.

COST RECOVERY AUTHORITY

SEC. 5. (a) Section 12(f) of the Act of March 3, 1901 (15 U.S.C. 278b(f)), is amended by inserting immediately before the period at the end thereof the following: "and second to ensure the availability of working capital necessary to replace equipment and inventories to the extent provided in advance in appropriation Act".

(b) Fees for calibration services, standard reference materials, and other comparable services provided by the National Bureau of Standards shall be at least sufficient to meet the requirements set forth in the amendment made by subsection (a), and any funds recovered in excess of such requirements shall be returned to the Treasury of the United States.

(c) The amendment made by subsection (a) (and the provisions of subsection (b)) shall be effective October 1, 1985.

COMPENSATION OF DIRECTOR

SEC. 6. (a) Section 5 of the Act of March 3, 1901 (15 U.S.C. 274), is amended—

(1) by striking out "He" at the beginning of the second, third, and fourth sentences and inserting in lieu thereof "The Director"; and

(2) by adding at the end thereof the following new sentence: "The Director shall be compensated at the rate now or hereafter in effect for Level IV of the Executive Schedule under section 5315 of title 5, United States Code."

(b)(1) Section 5315 of title 5, United States Code, is amended by adding at the end thereof the following new item:

"Director, National Bureau of Standards, Department of Commerce."

(2) Section 5316 of title 5, United States Code, is amended by striking out "Director, National Bureau of Standards, Department of Commerce."

(c) The amendments made by this section shall be effective October 1, 1985.

FINANCIAL ASSISTANCE TO INSTITUTIONS OF HIGHER LEARNING

SEC. 7. (a) In order to secure the services of the broadest possible range of talent in carrying out the programs of the National Bureau of Standards, the Act of March

3, 1901 (15 U.S.C. 271-278h), is further amended by redesignating section 18 as section 19, and by inserting immediately after section 17 the following new section:

"SEC. 18. The Director is authorized to expend such sums, within the limit of 10 percent of appropriated funds, as the Director may deem desirable for awarding research contracts, grants, research fellowships, and enter into other forms of financial relationships with institutions of higher learning within the United States and their faculties and students. The selection of persons to receive such contracts, grants, fellowships, and assistance shall be made on the basis of ability and of the relevance of the proposed work to the mission and programs of the National Bureau of Standards."

(b) The amendments made by subsection (a) shall be effective October 1, 1985.

SCIENTIFIC POSITIONS

SEC. 8. In order to maintain a highly qualified scientific staff at the National Bureau of Standards, a goal of 20 positions is established for the Senior Scientists Program at the National Bureau of Standards.

OFFICE OF PRODUCTIVITY, TECHNOLOGY, AND INNOVATION

SEC. 9. In addition to the sums authorized in the preceding provisions of this Act, there is authorized to be appropriated to the Secretary for fiscal year 1986 the sum of \$2,777,000 for the activities of the Office of Productivity, Technology, and Innovation.

NATIONAL TECHNICAL INFORMATION SERVICE

SEC. 10. (a) Section 2 of the Act of September 9, 1950 (64 Stat. 823; 15 U.S.C. 1152), is amended by adding at the end thereof the following new subsection:

"(d) To acquire capital equipment and inventories from receipts for work or services performed or to be performed under this section."

(b) In addition to the sums authorized in the preceding provisions of this Act, there is authorized to be appropriated to the Secretary for fiscal year 1986 the sum of \$537,000 for the patent licensing activities of the National Technical Information Service.

AVAILABILITY OF APPROPRIATIONS

SEC. 11. Appropriations made under authority provided in this Act shall remain available for obligation, for expenditure, or for obligation and expenditure for such periods as may be specified in the Acts making such appropriations.

COST REDUCTION REPORT

SEC. 12. Within 90 days of the enactment of this Act, the Director of the National Bureau of Standards shall review those recommendations of the President's Private Sector Survey on Cost Control and such other recommendations as may be included in the Office of Management and Budget report entitled "Management of the United States Government—1986", and shall submit a report to the Speaker of the House of Representatives and the appropriate committees of the House and Senate on the implementation status of each such recommendation which affects the National Bureau of Standards and which is within the authority and control of the Director.

Amend the title so as to read:

A bill to authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal year 1986, and for other purposes.

I. SUMMARY OF COMMITTEE ACTIONS

BUDGET TOTAL

The President's budget for fiscal year 1986 included a request for \$120,001,000 in new obligational authority for the National Bureau of Standards; \$1,991,000 for the Office of Productivity, Technology and Innovation; and \$537,000 for the National Technical Information Service, for a total of \$122,529,000. This represents a reduction

of \$13,543,000 from the funds available in FY 1985 for these programs which total \$135,802,000.

H.R. 1617, as amended by the Committee, includes \$139,955,000 for the National Bureau of Standards; \$2,777,000 for the Office of Productivity, Technology and Innovation; \$537,000 for the National Technical Information Service; and \$600,000 in excess foreign currency, for a total of \$143,869,000.

BUDGET AND OTHER ACTIONS

A. NATIONAL BUREAU OF STANDARDS AUTHORIZATION

The bill authorizes \$139,955,000 for the National Bureau of Standards. While being substantially above the President's request of \$120,001,000, this total is significantly below the \$226,130,000 requested by the National Bureau of Standards and the \$146,303,000 request that the Department of Commerce made to OMB for NBS for fiscal year 1986. The bill also authorizes \$600,000 in excess foreign currencies.

In arriving at \$139,955,000, the Committee accepted the new initiatives proposed for the National Bureau of Standards in the Administration's budget. These are \$1,944,000 for Process and Quality Control, \$3,000,000 for Biotechnology, and \$3,500,000 for Ceramics. In addition, the Committee agreed with the Administration's decision to provide \$8,000,000 for construction funds for the cold neutron source facility. The Committee did not accept the Administration's request once again this year that the National Bureau of Standards' Centers for Building Technology and for Fire Research be closed and that the Institute for Computer Sciences and Technology be limited to international networking. Restoring these Centers to fiscal year 1985 funding levels led the Committee to add \$14,241,000 to the Administration's request.

The Committee accepted several of the cuts proposed for NBS administrative and capital equipment programs while rejecting others. Cuts of \$1.7 million proposed under the Deficit Reduction Act of 1984 were accepted; these were deemed to be administrative in nature and not likely to reduce the effectiveness of NBS programs. The Committee accepted \$1,265,000 of the proposed \$3,265,000 reduction in the working capital fund; this money can be recouped as part of the charges for work for others and should not detract from the quality of equipment available to the National Bureau of Standards. The \$2,414,000 cost of the proposed 5% paycut was not included in the bill; instead "such sums" are authorized so that the authorization will reflect the decision of the Appropriations Committee on this matter. The Committee hopes that despite these cuts, the Bureau's ongoing programs will be able to continue to function at fiscal year 1985 levels.

The bill also sets floors for certain activities: \$2,500,000 for steel research, \$3,000,000 for robotics, and \$3,000,000 for evaluation of engineering data. In each case, new money is not provided, and NBS is expected to fund these efforts through a realignment of priorities.

The Committee appreciates the cooperation shown by the Department of Commerce and the National Bureau of Standards in its re-

sponsibilities of assessing the merits of the request for authorization of appropriations for the National Bureau of Standards. In future years, to help it fulfill its responsibilities, the Committee expects a complete financial disclosure, including a budget history table to be submitted either as part of the National Bureau of Standards budget book or separately in advance of Committee authorization hearings on the budget.

B. OFFICE OF PRODUCTIVITY, TECHNOLOGY AND INNOVATION (OPTI)

For fiscal year 1986, the bill would authorize \$2.8 million for the Office of Productivity, Technology and Innovation. This amount freezes the OPTI programs at fiscal year 1985 levels and is \$.8 million over the Administration's request of \$2.0 million for FY 1986.

C. NATIONAL TECHNICAL INFORMATION SERVICES (NTIS)

For fiscal year 1986, the bill would authorize \$537,000 for the Patent Licensing Program within the NTIS.

OTHER COMMITTEE ACTIONS

NBS ORGANIC ACT AMENDMENTS

1. Cost recovery authority

Section 5 would provide for Cost Recovery authority permitting income to be used to replace equipment and inventories before the net sales proceeds are paid into the general fund of the Treasury.

2. Director of the Bureau

Section 6 of the bill would amend the Organic Act to provide that the position of Director of NBS be moved from Level V to Level IV of the Executive Schedule.

3. Financial assistance to institutions of higher learning

Section 7 of the bill would amend the Organic Act to authorize the Director to award up to ten percent of appropriated funds as research contracts, grants, research fellowships, and other forms of financial assistance to faculty and students of institutions of higher learning.

MISCELLANEOUS PROVISIONS:

1. Line item transfers

The bill also includes a section which would provide a limit of 10 percent on the funds to be transferred between line items subject to Congressional notification and review. (Sec. 2)

2. Salary adjustments

The bill would provide for authorization of additional appropriations to permit the NBS budget to reflect a salary cut restoration or other government-wide salary and benefit adjustments occurring during fiscal year 1986. (Sec. 4)

3. Scientific positions

A goal of 20 positions is established for the Senior Scientists Program at the National Bureau of Standards (Sec. 8)

4. NTIS Organic Act Amendment

NTIS is given permission to acquire capital equipment and inventories from receipts for work or services performed by others. (Sec. 10)

5. Availability of appropriations

Funds that would be appropriated under this Act shall remain available as specified in the Appropriations Act. (Sec. 11)

6. Report on Grace Commission recommendations

The Director of NBS shall submit a report to Congress on the recommendations of the Grace Commission Report affecting NBS activities. (Sec. 12)

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations for fiscal year 1986 to the National Bureau of Standards and related agencies in the amount of \$143,269,000 out of money in the Treasury not otherwise appropriated, and \$600,000 in foreign currency which the Treasury Department determines to be excess to normal requirements of the United States, as follows:

<i>Budget activities</i>	<i>Authorization fiscal year 1986</i>
National Bureau of Standards:	
Measurement Research and Standards	\$39,985,000
Materials Science and Engineering	23,184,000
Engineering Measurements and Standards	34,846,000
Computer Science and Technology	10,000,000
Center for Fire Research	5,827,000
Technical Competence Fund	8,745,000
Central Technical Support	9,368,000
Cold Neutron Source Facility	8,000,000
Subtotal, NBS	139,955,000
Office of Productivity, Technology and Innovation	2,777,000
National Technical Information Service	537,000
Subtotal	143,269,000
Excess Foreign Currency	600,000
Total	143,869,000

COMPARISON WITH BUDGET REQUEST

Committee actions on the President's budget request for the National Bureau of Standards and related activities are reflected in the table below:

NATIONAL BUREAU OF STANDARDS AND RELATED ACTIVITIES AUTHORIZATION FOR PROGRAM
ACTIVITIES, FISCAL YEAR 1986

[In thousands of dollars]

	Fiscal year 1985 appropriation	Fiscal year 1985 obligational authority	Administra- tion: fiscal year 1986 request	Administra- tive reduction restored	Program restoration	Overhead adjust- ment	Fiscal year 1986 committee bill
Measurement Research and Standards.....	35,064	34,976	38,790	1,686		-491	39,985
Materials Science and English.....	19,375	19,637	22,580	904		-300	23,184
Engineering Measurements and Standards.....	34,462	34,649	29,888	1,555	3,100	+303	34,846
Computer Science and Technology.....	10,000	11,188	5,000		5,000		10,000
Fire Research.....	5,827	6,139			5,141	686	5,827
Technical Competence Fund.....	8,598	8,410	8,532	342		-129	8,745
Central Technical Support.....	10,659	^a 16,238	7,211	226		-69	9,368
Subtotal, NBS.....	123,985	131,236	112,001	4,713	15,241	0	131,955
Cold Neutron Facility.....			8,000				8,000
Total NBS.....	123,985	131,236	120,001	4,713	15,241	0	139,955
Office of Productivity and Innovation.....	2,777	2,777	1,991	62	724		2,777
NTIS.....	545	545	537				537
Total direct appropriation.....	127,307	^a 134,558	122,529	4,775	15,965	0	143,269
Excess foreign currency.....	500	1,244					600
Total.....	127,807	135,802	122,529	4,775	15,965	0	143,869

^a Includes working capital fund transfers.

II. COMMITTEE BUDGET ACTIONS, FISCAL YEAR 1986

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards (NBS) is the nation's oldest National Laboratory. It has, for the last 85 years, been at the cutting edge of technology, looking for ways to increase market efficiency. Some witnesses before the Committee on Science and Technology have testified that NBS, because it provides a sound system upon which to base measurements that are vital to new product research, assurance of quality, and maintenance of equity in trade, is the most important component of all the Department of Commerce efforts to help American industry.

NBS's cooperative efforts with industry and other government agencies are unique. Each year 150 industrial research associates, 700 faculty, students and postdoctoral research associates and 500 guest workers work in NBS laboratories side-by-side with the 1500 permanent NBS researchers. Over 17,000 private sector and university representatives attend the 125 major conferences and 600-700 workshops and seminars sponsored by NBS each year. NBS technical talks and papers number in the thousands each year. NBS personnel hold 1400 membership on national and international voluntary standards committees and chair 170 such committees. These activities and others assured both that NBS researchers are current on the measurement needs of American industry and that NBS knowledge is widely disseminated.

The NBS mission and its efforts take on special significance now as our country responds to serious challenges to its industry and manufacturing. Our economy can no longer depend alone on the individual genius to keep it advancing while our foreign competitors

have the advantage of strong support from national industrial strategies. Yet, the Administration's fiscal year 1986 operating budget for NBS is ten percent below 1985. It requests elimination or major curtailment to current NBS programs vital to the safety of American buildings and to the competitiveness of the U.S. telecommunication computer, and information products and services industry; while providing modest increases in areas of critical importance to this country's economic growth.

The eight line items in section 2(2) of the bill contain the Committee's recommended authorization levels for appropriations for the National Bureau of Standards for fiscal year 1986. These line items roughly correspond to the major operating units of the Bureau.

MEASUREMENT RESEARCH AND STANDARDS

Line item 2(a)(1) provides direct appropriations of \$39,985,000 to the National Measurement Laboratory, which is responsible for maintenance, development and measurement. Differences between this figure and the \$38,790,000 requested by the Administration are entirely due to adjustments to overhead and rejection by the Committee of specific cuts to overhead. The major program areas of this laboratory include fundamental physical measurements, radiation measurements, analytical chemistry, and chemical processes. The Laboratory also manages the standard reference material and standard reference data programs. The Administration's budget for this laboratory includes a new biotechnology program and the next increment of the process and quality control initiative. A description of these programs follows:

The fundamental physical measurements and standards program maintains and improves the national standards which underlie measurement science: mass, length, time, temperature, and electric current. Basic experimental and theoretical research is conducted here to build a stronger and more accurate foundation for physical measurements and to improve understanding of the phenomena on which physical measurements are based. A variety of new measurement services are made available to the public as the results of these technical activities mature.

The radiation measurements and standards program provides technology for the measurement and understanding of the effects of radiation in all areas including nuclear, ultraviolet, optical, infra-red and plasma radiation. Fundamental research in electron physics and nuclear structure, as well as work in ionizing radiation help to provide a basic understanding of the interaction of radiation with matter. The results of these research activities are applied in several areas including public health and safety, space exploration, pollution control, energy research, defense, industrial processing and advanced telecommunications.

The analytical chemistry program provides measurement methods and standards for high accuracy chemical analysis and serves as the Nation's reference laboratory for chemical composition measurements. More than 30 billion chemical analyses are performed each year in the U.S. Research in this area leads to meth-

ods and standards to ensure the quality of these measurements in areas ranging from clinical chemistry to metals processing.

Activities in the chemical properties and processes program focus on chemical properties and processes in surface science, chemical kinetics, thermodynamics, and molecular spectroscopy. These efforts lead to the development of advanced measurement techniques and improved understanding of the molecular foundations of complex physical and chemical systems. Research results from this program find application in many areas including the safe use of hazardous chemical materials; the design of energy efficient processes; the development of lasers; and environmental monitoring. The measurement technology transfer programs described in this section are the primary means by which NBS transfers its developed measurement techniques, standards and data to industry, universities, and government.

The Standard Reference Data (SRD) program provides scientists and engineers with critically evaluated physical and chemical data needed for solving problems in research, development and engineering design. Standard Reference Materials (SRM) have been produced, certified, and issued by NBS since 1906. They provide benchmarks for calibration of instruments and measurement systems. SRM's help industrialists and technologists make effective use of materials through improved quality control over the production of goods. They also help assure equity in buyer-seller transactions, and assure the long-term adequacy and integrity of the measurement process.

The Administration's request includes a biotechnology initiative of \$3,000,000 to enable NBS to develop and provide improved measurement methods, standards and reference data which are critically needed by the emerging biotechnology industry. The Administration's Process and Quality Control increase of \$1,944,000 will enable NBS to provide new and improved calibration services to other government agencies and to industry. The Committee's expectation's regarding these programs are found in the Committee Views section.

MATERIALS SCIENCE AND ENGINEERING

The Center for Materials Science carries out this work authorized in section 2(a)(2) by providing measurements, data, standards, reference materials, and other technical information fundamental to the processing and performance of materials. This information is used by industry, government agencies, universities, and other scientific organizations.

The programs of the Center include materials characterization, metallurgy and metals processing, and polymer and ceramic science. They support generic technologies in materials in order to foster their safe, efficient and economical use. Research in the Center also addresses the science base underlying new advanced materials technologies. Descriptions of the programs follow.

The materials characterization program provides for the more accurate characterization of the physical, chemical, compositional, and structural features of materials. Identification of significant compositional, and structural features enables manufacturers to

create materials with desirable properties. The NBS nuclear reactor plays a significant role in the development of new methods of materials characterization.

The metallurgy and metals processing program supports generic technologies which promote the safe, efficient, and economical use of metals. Research in metallurgy deals primarily with the evaluation of characterized microstructure and corresponding structure/property relations in metals and alloys. Metals processing research is aimed at providing the measure methods, standards, and data bases that will allow more rapid industrial adoption of innovation technologies and reduce processing costs in large segments of the metals industry.

The efforts in the polymer and ceramic science program provides standards, measurements, and fundamental concepts needed by industry for improved processing and durability of polymeric and inorganic materials. This program focuses on the properties of ceramics, glasses, composites, and polymer blends, and on the mechanical and electrical performance of these materials.

The authorization provided in section 2(a)(2) for material science and engineering is \$604,000 above the Administration's request of \$22,580,000. This difference is due entirely to overhead adjustments and adjustments required by the Committee's decision not to approve certain adjustments to overhead which would have a deleterious effect on Center's ability to carry out its mission. The Committee also in section 2(b)(1) has required the Center to devote at least \$2,500,000 to steel research. This action is explained in the Committee Views section of the report.

ENGINEERING MEASUREMENTS AND STANDARDS

This program authorized in section 2(a)(3) is primarily carried out by the National Engineering Laboratory (NEL). The NEL provides measurement and standards, related services, and physical property data in the areas of building research; electronic and electrical engineering; chemical engineering metrology; engineering and product standards, automated manufacturing research and mathematical sciences. A description of these programs follows:

The building research program provides basic measurement and test method support to the building industry, focusing on the development of advanced methods for data analysis and automation. These methods have the potential to improve the performance of constructed facilities and to increase productivity in construction. Strong technical and market-place barriers impede the effective use of advanced technologies to improved buildings and building practices. For example, the disaggregated nature of the construction industry means that a new team of owners, designers, manufacturers, and contractors is assembled for each construction project. Reliable performance prediction techniques, compatibility criteria for complex computer programs, and measurement and test methods to permit the construction industry to take advantage of computers and automation in the design, construction, and operation of facilities. This program is proposed for elimination in fiscal year 1986. The Committee's rationale for restoring funding to FY 1985 levels is found in the Committee Views Section of this report.

The electrical and electronic measurements program supports the production of semiconductors, electric power generation and transmission, and manufacture of components for communications. It offers a broad range of measurement services and develops new techniques in response to industrial and governmental needs.

The chemical engineering metrology program provides industry with the engineering foundation for reliable measurements and reference data that help the engineer to design, develop, and control chemical processes. A wide range of measurement services, instrument calibrations, and new procedures for accurately measuring and predicting the engineering properties of importance in industrial chemical systems.

The engineering and product standards program formulates and implements policy guidelines related to standardization and legal metrology, both nationally and internationally. It also coordinates with domestic, foreign, and international treaty and non-treaty organizations concerned with standardization and related measurement activities.

The mathematical sciences program provides support in mathematical modeling, statistics, data analysis, systems analysis, and computing to the engineering and scientific programs of NBS and to few other Federal agencies. The program develops mathematical methods in a host of mathematical subdisciplines working through extensive research collaborations with NBS scientists and engineers.

The automated manufacturing research program includes Automated Manufacturing Interface Standards, and Mechanical Engineering Metrology. This program provides services to the manufacturing sector of the economy for automated manufacturing, robotics, dimensional measurements, and special measurement technology for very high-precision machining. The automation program is addressing two critical problems: the need for measurement techniques suitable for a fully-automated production environment and the standards necessary to permit computer-controlled devices from different manufacturers to work together in a computer-integrated factory.

The Committee's authorization level of \$34,846,000 as opposed to \$29,888,000 in the Administration's request allows for full funding for the Center for Building Technology (CBT), as well as for restoration of cuts to overhead that the Committee finds to be harmful to the laboratory's programs. The Committee in section 2(b)(2) established a floor of \$3,895,000 for the CBT, as well as a floor of \$3,000,000 for robotics work within the laboratory which emphasized the importance the Committee places on this work.

COMPUTER SCIENCES AND TECHNOLOGY

The Institute for Computer Sciences and Technology carries out this activity authorized in Section 2(a)(4) by conducting research and providing technical support to the Federal government, state and local governments, and the private sector in the effective use of computers and networks. These efforts result in: technically sound international standards that will preserve the competitive options of the American automated data processing (ADP) industry;

increased productivity of both the Federal and private sector work force; reduction of waste, error, and unnecessary duplication in the application of computer systems; competitive and economic procurement of Federal computer systems, components, and services; life-cycle efficiency and effectiveness of Federal computer resources utilization; portability of data, software, and technical skills across computer systems; and protection of computer systems and networks against unauthorized access, manipulation, or abuse.

The Administration's fiscal year 1986 budget proposes a \$5.0 million reduction to this \$10.0 million program. This reduction calls for the termination of research and development work in domestic standards, information resource management, and computer security narrow the mission of the Institute to working on international networking standards only. The Committee restored the Institute to FY 1985 funding levels. The rationale for this action is described in the Committee Views section.

CENTER FOR FIRE RESEARCH

The Center for Fire Research of the National Engineering Laboratory provides the scientific and technical basis for efforts to reduce the Nation's fire losses and the cost of fire protection. The program develops the technical basis for improved practices for fire hazard assessment, prediction, and reduction. This capability to assess and predict fire hazards will: (a) facilitate reduction of the loss of life caused by smoke and toxic gases from fire; (b) permit introduction of more cost-effective fire protection technologies and improved materials and products by product developers and standards and code officials; and (c) enable quantitative fire safety evaluation of buildings, vehicles, and facilities by designers, architects and fire protection engineers. This effort is proposed for elimination in fiscal year 1986 in the Administration budget. The Committee's reasons in section for restoring the Center to FY 1985 funding levels 2(a)(5) of \$5,827,000 are found in the Committee Views section of the report.

TECHNICAL COMPETENCE FUND

This fund authorized in section 2(a)(6) is used by the NBS programs to ensure that NBS has the underlying knowledge and skills necessary to meet the responsibilities included in its enabling legislation, additional legislative mandates, and administrative directives. The fund pays for establishment of areas of technical excellence through long-term research responsive to outside technological developments and for seed money for new programs undertaken in response to changing national needs. The difference between the Committee's authorization level of \$8,745,000 and the Administration's request of \$8,532,000 reflects restorations of proposed adjustments to overhead the Committee finds to be harmful to the fund's programs.

CENTRAL TECHNICAL SUPPORT

The purpose of this activity authorized in section 2(a)(7) by the Committee at \$9,638,000 is to provide all NBS programs with tech-

nical support in the following areas: research associate program; computing support; facilities modifications and improvements; and transfers to the working capital fund. The description of these programs follows.

The research associate program consists of the industrial research associates, postdoctoral research associates, and graduate cooperative education participants. These components have the direct effect of maintaining NBS competence by making available each year more than 150 high caliber but low cost scientists and engineers for ongoing research programs and providing a mechanism for technology transfer of NBS research and methods to the scientific and engineering communities. The research associate programs serve as an excellent information exchange system and recruitment vehicle.

The computing support program provides central computing facilities for all NBS programs and for NOAA/ERL. Funds appropriated in fiscal year 1984 second supplemental appropriations bill permitted NBS to contract for a Class VI Supercomputer system. This equipment will become the central component of the consolidated computing system for NBS and NOAA/ERL. Installation of the system began in April 1985 and complete acceptance is expected by September 1985. See the Committee Views section for Committee expectations regarding this system.

The facilities modifications and improvements program provides regular improvements, replacements, and modifications to existing laboratories and buildings. The goals of this program are to ensure a safe working environment for employees, avoid costly interruptions to the technical programs, improve operational capabilities, and maintain existing buildings and facilities in proper condition.

Transfers to the working capital fund ensure that sufficient funds are available for investment in depreciable equipment and inventories of materials offered for sale by NBS.

The Equipment Replacement Program was established in 1976 to improve NBS annual equipment levels relative to other laboratories. The goal of this program was to have equipment procurements equal to ten percent of the total NBS operating budget. NBS has made substantial progress towards this goal and is currently at a nine percent level. This program has been proposed for elimination in the fiscal year 1986 budget. The restoration of \$2,000,000 of these funds by the Committee is explained in the Committee Views on the Working Capital Fund.

COLD NEUTRON SOURCE FACILITY

Section 2(a)(8) authorizes \$8,000,000 for first year construction funds for this important national resource which is described in the Committee Views section. The Administration's request for these funds was included under Central Technical Support. The Committee separated the Cold Neutron Source Facility from the Central Technical Support line to avoid co-mingling of operating and construction funds and to show that, despite a number of new programmatic initiatives, the dramatic cuts in the Administration's budget had left the NBS before inflation with ten percent less operating funds than the year before.

III. COMMITTEE VIEWS

CENTER FOR FIRE RESEARCH

COMMITTEE VIEW

For the third year in a row the Administration has proposed the elimination of the fire research program at the National Bureau of Standards with the repeated argument that this research is more properly the role of the private sector and/or State and Local governments. For the third year in a row the Committee has received testimony from a wide variety of witnesses refuting that argument and providing substantial evidence that if the Bureau stopped its work in this area, no one else could or would do it.

Discussion

The Center for Fire Research conducts the only comprehensive fire research program in the country. 80% of the basic fire research performed in this country is either conducted by or funded by the Center. This program provides the scientific and technical basis for efforts to reduce the Nation's fire losses and the cost of fire protection. It is directed especially toward reducing the problem of residential fires which account for the majority of fire-related deaths and injuries in the United States.

In addition, under P.L. 93-498, the Federal Fire Prevention and Control Act of 1974, the Center is mandated to perform and support research on all aspects of fire with the aim of providing scientific and technical knowledge applicable to the prevention and control of fires. Therefore, the program at the Center required to include the following: (1) basic and applied fire research for the purpose of arriving at an understanding of the fundamental process underlying all aspects of fire; (2) research into the biological, physiological, and psychological factors affecting human victims of fire, and (3) operation tests, demonstration projects, and fire investigations in support of the activities as set forth in the Fire Act.

In FY 1977, a fire research grants program formerly conducted by the National Science Foundation (NSF) since FY 1971 was transferred to the CFR. The NSF grants program, under its Research Applied to National Needs Program (RANN), had been funded at a level of about \$600K until 1977, when the funding level rose to about \$2200K. Funding for this program has remained essentially constant since that time. The CFR has continued the NSF tradition of funding peer reviewed, high quality, fire research and has made the research grants program an integral part of its research program. Each grant is awarded because the proposed work and expected results are essential to furthering the work of CFR, particularly when in-house staff are not available. The grants program brings the talents of world-class researchers in many fields to focus on fire research. The CFR funded grants program is the pre-dominate supporter of made fundamental fire research in the U.S. Since most of the grants are to universities, the program supports much of the advanced training in fire research that produces the next generation of fire researchers. The fire research grants program has been an important contributor to the major advances in

fire science and engineering in the last decade. Therefore, the Committee continues strongly to support the Center for Fire Research and continuation of the CFR program in fiscal year 1986 at the level of \$5.8 million including \$2,000,000 for fire research grants, the amounts authorized and appropriated in fiscal year 1985.

CENTER FOR BUILDING TECHNOLOGY

COMMITTEE VIEW

The Committee also continues to support the Center for Building Technology which has been proposed for elimination for the third consecutive year by the Administration. Research conducted at the Center provides the technical basis for voluntary standards, building codes and specifications through development of improved measurement techniques, test methods, and technical data not available from other sources.

Discussion

The Committee continues to believe that the National Bureau of Standards is in a unique position to provide unbiased and pertinent information in this field and that the private sector and state and local governments with their 13,500 building code jurisdictions either cannot or will not carry out the nonproprietary technical research needed in this area. NBS is the only Federal laboratory with the capability of investigating the physical causes of major building and construction failures, such as the walkway collapse in the Kansas City Hyatt Regency, and promptly reporting the results so as to avoid reoccurrences of tragic failures. The National Bureau of Standards also has a key role to play in the National Earthquake Hazards Reduction Program. It provides research and technical support for the development of seismic design and construction provisions. In addition, federal agencies such as the General Services Administration, Federal Emergency Management Agency, Department of Energy and the White House rely on NBS as an authoritative laboratory resource for their building research needs. Accordingly, the Committee has restored funding in the amount of \$3.9 million for the Center for Building Technology.

COMPUTER SCIENCES AND TECHNOLOGY

COMMITTEE VIEW

The Committee reaffirms its belief that the mission of the Institute for Computer Sciences and Technology (ICST) is essential to the development and implementation of a coherent National information policy and to the management of Federal information resources. The Committee believes that ICST plays an important role in increasing the competitiveness of U.S. telecommunications, computer and information products and services; in increasing the acceptance of international technical standards based on U.S. technology; and in improving the Federal government's use of computer and telecommunication technology. Therefore, the Committee does not accept the Administration's proposal that the Bureau terminate its research and development work in standards, informa-

tion resource management and computer security to concentrate only on international networking. However, if the Bureau can identify functions within ICST that can be clearly justified for transfer to the private sector, the Committee encourages the Bureau to inform Congress of such alternatives. Until such time, however, the Committee directs the Bureau to continue its work in these areas. Accordingly, funding has been restored at the fiscal year 1985 level for ICST.

PRESIDENT'S DEFICIT REDUCTION PROGRAM

COMMITTEE VIEW

This year the National Bureau of Standards budget request, as presented to Congress, contains an \$8.8 million reduction for salary, administrative, and inflationary costs. These cuts follow years of benign neglect of the Bureau as well as actual administrative cuts twice already during the 1980's. The Committee's bill as reported restores \$4.7 million of these funds.

Too deep a cut in administrative overhead would cripple the Bureau's programs for transferring its knowledge to American industry. Through these funds, NBS personnel serve on or chair over 1100 private sector standards committees. NBS's Public Affairs effort hosts an average of two major conferences per week where ideas are exchanged with the private sector and the fruits of NBS's research efforts are disseminated. NBS researchers also publish large numbers of technical papers, host many visiting scientists and businessmen and otherwise disseminate knowledge, much of which is funded through overhead. Evidence of the utility of this work includes the fact that after careful examination of the Bureau, the Grace Commission did not find the need to make any recommendations concerning the Bureau's use of discretionary funds.

Therefore, the Committee allowed the Bureau to recoup a small part of the inflationary increases it faces, while deferring to the Appropriations Committee on restoration of salary cuts and cost-of-living increases.

STEEL TECHNOLOGY

COMMITTEE VIEW

The Committee directs that at least \$2,500,000 of the funds available to the National Bureau of Standards for Materials Science and Engineering be made available for steel technology.

On March 11, 1980, the General Research Committee of the American Iron and Steel Institute formed a task group to formulate a plan of research and development relevant to process control and sensor development for the steel industry. The purpose of the plan was to provide a basis for discussion with appropriate organizations with the goal of beginning initial development and basic research. The task force included 13 member companies; 537 research needs were identified. After a ranking process by individual member companies the list was reduced to 18, of which 4 were treated as top priority. Work with the National Bureau of Stand-

ards was begun which led to a briefing/workshop at NBS in 1982 on process control sensors for the steel industry. This workshop was attended by 160 people. Control cooperation between the steel industry and NBS has continued, and steel related research and standards work is now funded at approximately \$1,000,000 per year of which \$500,000 per year involves sensor work.

The President's Science Advisor in February 1984 began work with industry, universities, the Department of Energy and representatives of certain national laboratories on a plan to use the expertise of the national laboratories to conduct research into leapfrog technologies for the steel industries that will take their technologies beyond those of their foreign competition. Most of the proposed funding for this program was recommended for the Department of Energy, but \$2.5 million was recommended for an enhancement of the ongoing sensor work of the National Bureau of Standards. This proposal was recommended by the Department of Commerce to the Office of Management and Budget, but funding was not forthcoming. The Committee endorses this research program and feels that it should go forward on an expeditious timetable. However, budget limitations prevent the addition of funds to the NBS budget to pay for the research. The Committee, therefore, directs the Bureau to reorder its priorities in materials research to permit partial funding of this steel initiative and to increase the total 1986 authorization for NBS steel research to \$2,500,000.

EVALUATED ENGINEERING DATA BASE

COMMITTEE VIEW

The Standard Reference Data Act (P.L. 90-396) establishes NBS as the governmental focal point for the collection, critical evaluation, publication, and dissemination of standard reference data. Up to the present time, the NBS Office of Standard Reference Data has focused its attention primarily on physical and chemical data. The computer age has revolutionized the ways of science and caused an increased need for reliable data particularly in computer-readable form. Thus, a critical disparity has grown between the needs and the availability of evaluated data not only in physics and chemistry but particularly in the engineering field. Until now, there has been no coordinated effort in this field and the current piecemeal approach has left the few data centers that do or did deal with the subject with a totally inadequate funding base. Even then, several of these centers were oriented towards bibliographic information. Our computer-trained engineers require computerized systems that can provide best available numerical data to be accessed by experts from the literature. This need is especially critical for the many smaller-sized, highly innovative industries that require interdisciplinary data use.

A proposal totaling \$5.6 million was submitted to the Department of Commerce by NBS but funding was not forthcoming. The Committee endorses the establishment of an evaluated engineering data base. However, budget limitations prevent the addition of funds to the NBS budget to pay for this effort. The Committee, therefore, directs the Bureau to reorder its priorities within its vari-

ous laboratories to permit a \$3,000,000 evaluated data effort during FY 1986.

SCIENTIFIC STAFFING POSITIONS

COMMITTEE VIEW

The Committee considers application of a general reduction in GS-11 through 15 positions to the Bureau to be a mistake and has restored the funding as a result of this initiative. The National Bureau of Standards relies on highly qualified scientific staff in the grade range from GS-11 to GS-15 for the successful conduct of its functions. The NBS scientific staff comprises over 80% of NBS employees in this grade range. Scientists usually start at least at GS-11 and expect orderly promotions. Therefore, any reduction in this staff would make it even more difficult for the National Bureau of Standards to compete with the private sector in recruiting qualified personnel and would lead directly to a curtailment of programs that are important for the Nation's economic well being, and for the safety and security of its citizens. The Committee therefore, exempts the technical programs of the National Bureau of Standards from the reduction and urges the Administration to establish and fill 1777 positions in the GS-11 to GS-15 range needed to carry out the National Bureau of Standards program for fiscal year 1986. This total allows for a reduction in the number of strictly administrative positions, approximately five each year for a total of twenty-two distributed over the fiscal years 1985-1988.

Furthermore, in order to encourage technical personnel with a high degree of competence to serve the Federal government, the Committee asked the Director of the National Bureau of Standards to take the appropriate action to increase the National Bureau of Standards Senior Scientists Program to a total of twenty scientists. It is hoped that these senior researchers, recruited or appointed internally, over the next three or four years will serve as a magnet for attracting high quality researchers in the GS-11 to GS-15 ranges. The Committee believes this measure is necessary to keep the talented staff required to carry out the National Bureau of Standards programs.

PROCESS AND QUALITY CONTROL

COMMITTEE VIEW

This Administration initiative (\$1.9 million) will enable NBS to provide new and improved measurement services to industry and government agencies in order to increase the effectiveness of industrial process and quality control.

American industry is placing a major new emphasis on quality control and increased productivity as a result of the intense competition involving both cost and quality of products. Furthermore, emphasis in quality control is shifting from post-production inspection to process control. In process control, the parameters governing the production process, and hence the quality of the final product, are constantly monitored during the manufacturing process and appropriately changed to yield a high quality product. The re-

sults of the research funded by this initiative will provide badly needed calibration services to industrial standards laboratories in the area of spectroradiometry, impedance, and microwave measurements.

Current NBS resources are insufficient to improve and deliver services to established measurement areas and at the same time to develop new services to meet emerging quality control needs. The specific research and development projects included in this initiative, while addressing less than 20% of the recommendations of NBS in this area and a much smaller percentage of the needs identified by affected industries, were nevertheless identified by national organizations and endorsed by a panel of industrial and government experts. They are an important start in the revitalization of NBS's calibration services program which to many in industry is the core of the NBS mission.

The Committee urges the NBS to review its list of priorities for new initiatives to meet measurement needs in process and quality control technology in light of the March 1985 position paper of the Committee to Promote National Microwave Standards of the IEEE and other recent industrial statements of calibration needs and to make any necessary additions and adjustments. Furthermore, the Committee urges NBS, the Department of Commerce and the Office of Management and Budget to give serious consideration to the merits of a sizeable increase in these efforts taking into consideration the defense and trade implications of this important work.

MATERIALS SCIENCE: THE IMPORTANCE OF THE COLD NEUTRON RESEARCH FACILITY

COMMITTEE VIEWS

The Committee strongly supports the Bureau's proposal to begin construction in fiscal year 1986 of a new research facility that exploits the superb operating characteristics of the excellent nuclear research reactor at NBS in Gaithersburg, Maryland. The Cold Neutron Research Facility will open up to U.S. scientists and engineers a research capability for the structural characterization of materials that, up to now, has been available only in Europe.

The Committee is pleased that, like the NBS research reactor itself, the Cold Neutron Research Facility will operate as a National user facility for a broad spectrum of research related to materials science and engineering, and will involve substantial interaction between NBS and the industrial and university research communities.

DISCUSSION

The National Academy of Sciences (NAS) was asked by the Office of Science and Technology Policy to review U.S. needs for major materials facilities and to establish priorities among these facilities. Last year the NAS released its report, "Major Facilities for Materials Research and Related Disciplines," in which the provision of an internationally competitive cold neutron research capability was the highest priority recommendation among opportuni-

ties for new capabilities at existing major materials facilities in the U.S.

The fiscal year 1985 NBS budget contains \$1.5 million for the installation of a cold neutron source and related equipment at the NBS reactor. The proposed fiscal year 1986 budget would allow NBS to begin to construct the facility itself, which will include fifteen experimental stations. The Committee accepts the Administration's request for \$8.0 million in fiscal year 1986 to begin this construction project.

BIOTECHNOLOGY

COMMITTEE VIEW

The Committee is pleased with the Administration's recommendation that NBS undertake a biotechnology initiative at a level of \$3.0 million for fiscal year 1986. The Committee views biotechnology as one of the most rapidly developing new scientific disciplines and feels that sufficient thought and planning has gone into the creation of an NBS biotechnology program during the past year to merit moving forward with the initiative at this time.

We urge the NBS to develop its capabilities in biotechnology keeping in mind its primary mission as a standards agency and avoiding wherever possible duplication of efforts now underway in the National Institutes of Health, the Department of Agriculture, and the National Science Foundation. We view the development of a more narrow mission statement than the one recently presented to the Congress, as well as development of formal understandings between NBS and other agencies on their respective roles in biotechnology as being of crucial importance.

We see NBS' primary role as development and dissemination of the standards necessary to permit biotechnology to develop from a small scale research-oriented industry to a large scale producer of many products. We consider its basic research mission to be secondary to standards work and primarily for the purpose of keeping NBS biotechnologists at the state of the art. We foresee that among other standardization efforts, the NBS will focus on:

1. Development and standardization of techniques needed to achieve homogeneity in protein samples.
2. Assessment of purity of samples produced by biotechnological methods including determining primary structure of proteins.
3. Establishment of a registry describing each protein in the market and consideration of the appropriateness of cooperating with the U.S. Patent Office and the Department of Agriculture in this endeavor.
4. Aid to industry regarding standards problems related to the scale-up and automation necessary to get biotechnology from the laboratory to the commercial marketplace.

We, therefore, ask the NBS to submit to the Congress in advance of the fiscal year 1987 budget, a revision of its biotechnology plan which has taken these views into consideration.

ADVANCED CERAMICS

COMMITTEE VIEW

The Committee agrees with the emphasis and visibility NBS has added to its materials programs by developing the new Center for Materials Science. The advanced ceramics initiative (\$3.5 million) is a clear indication of the contribution the Center can make to U.S. industrial competitiveness and the Committee hopes it is not the last such initiative emerging from the Center. Ceramics are inorganic, nonmetallic materials that are manufactured, usually at high temperatures, into end-use parts, devices and systems from abundant natural resources. The special properties attainable in advanced ceramics often make them the preferred, and sometimes the only, materials suitable for a broad range of high-performance uses in electronics, optics, structures, and advanced engine power trains. The U.S. share of the advanced ceramics world market is declining; Japan now has a 50 percent share, and in some areas, such as semiconductor packaging, more than 70 percent. New markets in ceramic engines and turbine parts, cutting tools, and high temperature sensors represent a large potential leverage on the GNP. The NBS effort will provide the critically needed measurement methods and standards, key data and predictive concepts required to assure reliable performance of advanced ceramics and to enable American industry to be among the world leaders in this emerging field.

JAPANESE TECHNICAL INFORMATION

COMMITTEE VIEW

The Committee continues to be concerned about the imbalance in the exchange of scientific and technical information between the United States and Japan. Significant advances in science and technology, along with a national policy of emphasis on R&D, are expected to continue in Japan in the coming years. The United States is not getting the benefit of this information, either to enhance its data bases or to understand better the relative technological strengths of U.S. and Japan, because it does not have an adequate system in place to explore properly these scientific and technical developments. For the past two years, the Committee has authorized funds for a program to increase the availability of Japanese science and engineering literature to U.S. scientists and engineers. The program involves increased monitoring, screening, translating, abstracting, indexing, disseminating, and marketing. In addition, the Committee authorized that the Director, staff and facilities of the National Technical Information Service be utilized for all or part of this effort in the belief that Federal funding is required to correct this situation, but appropriations did not occur. The Committee intends to pursue this issue further by exploring the possibility of using excess foreign currencies to allow the translation and dissemination of Japanese technical information and by holding Congressional hearings later in the session on this issue. The committee strongly encourages the Assistant Secretary of Commerce for Productivity, Technology & Innovation and the Director

of the National Technical Information Service likewise to pursue aggressively alternative funding options for this important work.

OFFICE OF PRODUCTIVITY, TECHNOLOGY AND INNOVATION

COMMITTEE VIEW

The Office of Productivity, Technology and Innovation (OPTI) was established to stimulate U.S. private sector productivity, international competitiveness, and economic security and growth.

OPTI is the leading agency for innovation policy within the Federal government, and the small business division within this office performs an important function. Small businesses are the leading innovators in this country, but because of monetary considerations, they are not always able to bring new technologies and processes to commercialization. OPTI is vital in maintaining a sensitivity within the Department of Commerce to the special needs of small businesses and the role they play in technological innovation. The Administration has proposed the abolishment of OPTI by the end of fiscal year 1986. In the belief that OPTI performs valuable services both to meet the special needs of small businesses and also in the areas of patent regulations, technology transfer, voluntary conversion to the metric system, and cooperative activities between government and industry, the Committee believes OPTI should be continued and has restored funding at the 1985 fiscal year level.

METRIC CONVERSION

COMMITTEE VIEW

The metric system has become the official language of international trade. Only one percent of the world's population outside the United States lives in countries that are not metric or going metric, and the non-metric countries, Burma and Brunei, are not likely to become major trading partners of the United States. The Office of Productivity, Technology, and Innovation's Office of Metric Programs is the official coordinating point within the federal government for support of companies voluntarily expanding their use of the metric system, yet in the proposed fiscal year 1986 budget this office is proposed for phase-out with no indication as to the future of metric coordination within the federal government.

Given our crushing negative trade balance, the Commerce Department must be encouraged to continue to help U.S. business, especially small business, to overcome the burdens of metric "illiteracy" in order to be able to compete on an equal footing with their overseas competitors. U.S. business is at risk of losing substantial sales opportunities by not being able to supply metric products and the situation will only get worse as our potential overseas customers become less and less willing to accept non-metric products.

Therefore, the Committee recommends that the Department of Commerce continue to coordinate voluntary governmental metric activities through the Office of Metric Programs, and if possible within the limited funds of the Department of Commerce, to increase the services it provides to U.S. manufacturers who must compete for sales in metric-dominated markets.

GRACE COMMISSION

COMMITTEE VIEW

A Committee of two representatives from the President's Private Sector Survey on Cost Control visited NBS, reviewed 350 research tasks and visited five centers in NBS-Gaithersburg and five in NBS-Boulder.

Grace Report recommendations and NBS responses include:

1. GRACE. Establish a private sector Project Evaluating Committee to assess the appropriateness of NBS research projects and eliminate current research that is outside the NBS mission.

NBS. The existing statutory Visiting Committee mandated by the NBS Organic Act and the existing National Academy of Sciences Evaluation Panels annually perform these functions. The findings of these bodies, which are made up of nationally recognized individuals from the private sector, are reported to the Secretary of Commerce. Both the Secretary and NBS believe that this existing evaluation process fulfills the intent of this recommendation.

2. (a) GRACE. Replace senior grade scientists with technicians to achieve a better staff balance and savings from the salary differential.

NBS. The baseline figures used by the Grace Commission were inaccurate. They included scientific managers who do not require services of technicians, and they excluded technical staff who perform technician-type services for the scientific programs, such as craftsmen in the NBS shops division. Based on the corrected figures, the NBS ratio is in compliance with the three-to-one ratio suggested by the Commission. In addition to the three-to-one ratio compliance, NBS is making further efforts to hire technicians.

(b) GRACE. Hire low cost university students.

NBS. NBS enjoys favorable university student participation at Boulder because of the proximity of the University of Colorado. At Gaithersburg, participation has been limited because of its remote location. NBS has been working with local universities and colleges to increase the flow of students to NBS.

(c) GRACE. Establish of permanent university presence at the NBS Gaithersburg facility as a means of improving the physical proximity to a university.

NBS. Section 7 of the Committee bill will allow NBS to establish fellowships with the faculty and students of institutions of higher learning.

In view of the controversy surrounding the Grace Commission recommendations, the Committee directs the NBS to review its situation for further compliance possibilities and submit a summary report to the Committee within 90 days of the enactment of this bill.

WORKING CAPITAL FUND

COMMITTEE VIEW

Restore \$2,000,000 to the working capital fund by raising the total for that fund contained in the section (b)(3) to \$5,608,000.

The working capital fund of the National Bureau of Standards pays for the replacement of capital equipment. NBS traditionally has been permitted to replenish these working capital funds by making overhead assessments to other agencies when doing work for them, based on the purchase price of the equipment used. NBS programs contribute on a similar formula when equipment is assigned to them. Replacement costs being much higher than original purchase price, led to a steady erosion of NBS's ability to acquire modern equipment. In order to upgrade the level of equipment several years ago, a program to supplement the working capital fund was begun. The payment for fiscal year 1985 was \$3,265,000 and a similar payment would be necessary for fiscal year 1986 in the absence of new legislative authority to recover costs. The \$3,265,000 was not included in the Administration's budget.

However, a cost recovery provision is included as section 5 of this bill. It will permit the National Bureau of Standards to make its working capital fund calculations on the basis of full replacement costs rather than purchase price. Therefore, subject to appropriations, the NBS should be able to recover an additional \$1,265,000 from other agencies for which it does work, leaving a \$2,000,000 shortfall for the working capital fund. This \$2,000,000 was added by the Committee. In future NBS budgets the Committee strongly recommends that NBS distribute these funds to the programs based on their equipment needs.

SUPERCOMPUTER INFRASTRUCTURE AND RELATION TO ICST

COMMITTEE VIEW

The Committee has strongly supported the acquisition of a class VI consolidated scientific computing system to serve the scientific computing needs of the National Bureau of Standards and the National Oceanographic and Atmospheric Administration's Environmental Research Laboratory. The expeditious manner in which the NBS has handled the acquisition and installation of the class VI computer in Fiscal Year 1985 is to be commended. The Committee is concerned, however, that the technical infrastructure necessary to provide proper access by NBS-Boulder and NOAA/ERL has not developed in the same expeditious manner. The Congress provided a major investment on the basis that the scientific computing system would be a consolidated one. NBS must take the necessary steps to assure access by the NBS-Boulder and NOAA/ERL programs, so that the computer will serve as a tool of major importance in addressing scientific and technical problems for all of these organizations.

In addition, NBS should adopt a coordinated computer policy where the Institute for Computer Sciences and Technology will be assured access to the computer for the development of supercomputer technology.

Another concern of the Committee is the staffing level for the operation of the class VI computer. The Committee believes that the staffing level planned for the operation of the highly sophisticated scientific computer should not be left to contract employees, but that the expertise gained from operation of the unit is a valuable national resource that should be concentrated in government employees. NBS should attain adequate staffing level to ensure full utilization of this important facility.

NUCLEAR WINTER

COMMITTEE VIEW

Computer models have predicted that a major nuclear exchange may cause severe climatic effects, or nuclear winter. However, there are large uncertainties in our scientific understanding of nuclear winter and increased research efforts are required. In particular, the results from the computer models are extremely sensitive to assumptions about smoke particle generation, evolution, and transport. These processes are not well characterized and the most critical need is for experimental research to quantify these effects for use in the calculations.

The Committee acknowledges that the Center for Fire Research at the National Bureau of Standards has a nationally recognized capability for doing the most critical laboratory-scale experiments. The Center possesses experimental expertise in smoke formation and coagulation, in detailed option properties of smoke, and in behavior of the fire plume, as well as computational expertise in fire modelling. These basic research areas are central to determining the likely duration and geographic extent of a nuclear winter and the likely depth of the temperature drop associated with it. In view of this expertise, the National Bureau of Standards is encouraged to seek funding from the Department of Energy and the Department of Defense for expanded research efforts in this area. While the Committee insists that the NBS does not obligate such funds prior to their being received from other federal agencies, this in no way precludes the Director from expanding a portion of his discretionary funds on nuclear winter research.

IV. SECTIONAL ANALYSIS OF THE BILL

H.R. 1617

A bill to authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal year 1986 and for other purposes.

SECTION 1

This section provides the short bill title "National Bureau of Standards Authorization Act for Fiscal Year 1986".

SECTION 2

This section authorizes appropriations to the National Bureau of Standards for fiscal year 1986 in the amount of \$139,955,000. The budget activities are authorized as follows:

- (1) Measurement Research and Standards, \$39,985,000.
- (2) Materials Science and Engineering, \$23,184,000.
- (3) Engineering Measurements and Standards, \$34,846,000.
- (4) Computer Science and Technology, \$10,000,000.
- (5) Center for Fire Research, \$5,827,000.
- (6) Technical Competence Fund, \$8,745,000.
- (7) Central Technical Support, \$9,368,000.
- (8) Cold Neutron Source Facility, \$8,000,000.

This section also sets floors for certain activities: of the funds authorized for Materials Science and Engineering, \$2,500,000 is set aside for steel technology; of the funds authorized for Engineering Measurements and Standards, \$3,895,000 is to be available for the Center for Building Technology and \$3,000,000 is set aside for Robotics; of the total funds authorized for Measurement Research and Standards, Materials Science and Engineering, Central Technical Support, and Cold Neutron Source Facility, \$5,608,000 is to be available for transfer to the Working Capital Fund; and of the total funds authorized for Measurement Research and Standards, Materials Science and Engineering, and Engineering Measurements and Standards, \$3,000,000 is set aside for an Evaluated Engineering Data Base. In each case, NBS is expected to fund these efforts through a realignment of priorities.

Section 2 also authorizes that funds may be transferred into or out of the line items provided that if the sum is in excess of 10 percent, proper notification must first be given to the appropriate House and Senate Committees.

Finally, this section was amended to include a provision that the Bureau seek reimbursement from other Federal agencies to support research on the climatic effects of nuclear explosions.

SECTION 3

This section authorizes \$600,000 in excess foreign currencies for expenses of the Bureau incurred outside the United States.

SECTION 4

This section provides for authorization of additional appropriations to permit the NBS budget to reflect a salary cut restoration or other government-wide salary and benefit adjustments occurring during fiscal year 1986.

SECTION 5

This section amends section (12)(f) of the Organic Act of March 3, 1901 (15 U.S.C. 278B(f) to provide NBS with cost recovery authority to permit income to be used to replace equipment and inventories before the net sales proceeds are paid into the general fund of the Treasury.

SECTION 6

This section amends section 5 of the Organic Act of March 3, 1901 (15 U.S.C. 274) to provide that the position of Director of the Bureau be moved from Level V to Level IV of the Executive Schedule.

SECTION 7

This section amends the Organic Act of March 3, 1901 (15 U.S.C. 271-278h) to authorize the Director to award up to 10 percent of appropriated funds on research contracts, grants, research fellowships, and other forms of financial assistance to faculty and students of institutions of higher learning.

SECTION 8

This section establishes a goal of 20 positions for the Senior Scientists Program at the National Bureau of Standards in order to maintain a highly qualified scientific staff.

SECTION 9

This section authorizes the sum of \$2,777,000 for the activities of the Office of Productivity, Technology and Innovation for fiscal year 1986.

SECTION 10

This section amends section 2 of the Act of September 9, 1950 (64 Stat. 823; 15 U.S.C. 1152) to give the National Technical Information Service (NTIS) the right to acquire capital equipment and inventories from receipts for work or services performed for others. In addition, it authorizes the sum of \$537,000 for the Patent Licensing activities within NTIS.

SECTION 11

This section provides that funds that would be appropriated under this Act shall remain available as specified in the Appropriations Act.

SECTION 12

This section directs the National Bureau of Standards' Director to review those recommendations of the President's Private Sector Survey on Cost Control contained in the OMB Report "Management of the United States Government—1986" which affect the Bureau and submit a report on the implementation of those recommendations to the appropriate House and Senate Committees.

V. OVERSIGHT ACTIVITIES

Pursuant to Rule XI, Clause 2(1)(3)(A), and under the authority of Rule X, Clause 2(b)(1) and Clause 3(f), of the Rules of the House of Representatives, the following statement on oversight activities is made:

Committee oversight of the National Bureau of Standards from May 1984 through April 1985 has consisted primarily of hearings, inspection of the NBS facilities at Gaithersburg, Maryland, and Boulder, Colorado; staff attendance at NBS meetings and briefings; and informal discussion between Committee Members, staff and NBS representatives.

The Committee's oversight findings and recommendations are contained in the body of the Report.

Hearings

Authorization hearings were held on February 26, 28, and March 6, 1985. Testimony was given by Director Ambler and the directors of the four National Bureau of Standards laboratories at Gaithersburg, Maryland, and Administration witnesses for the Office of Productivity, Technology and Innovation and the National Technical Information Service on February 26, and by outside witnesses from the academic and business world on February 28 and March 6.

Inspection of NBS facilities

In January 1985, Members and staff of the Committee visited the research facilities in Gaithersburg, Md. for the purpose of program and facility familiarization. Also, in January 1985, staff made a site visit to the Boulder, Colorado, research facilities.

Attendance at NBS meetings

Members and staff of the Committee have met with NBS staff to receive various briefings on budget and program matters.

Reports

The Committee requested a GAO study to be conducted on the "Opportunities and Constraints for Expanding Use of Research Facilities at the National Bureau of Standards".

Plans

During the coming year the Committee plans for oversight include review of selected programs and projects of the NBS.

VI. OVERSIGHT FINDINGS AND RECOMMENDATIONS BY THE COMMITTEE ON GOVERNMENT OPERATIONS

No statement of findings and recommendations on oversight activity have been submitted by the Committee on Government Operations for inclusion in the report, pursuant to Rule X, Clause 2(b)(2), and Rule XI, Clause 2(1)(3)(D) of the Rules of the House of Representatives.

VII. BUDGET ANALYSIS AND PROJECTION

H.R. 1617 provides no new budget authority or tax expenditures. Consequently, the provisions of section 308(a) of the Congressional Budget Act are not applicable.

VIII. COST ESTIMATE CONGRESSIONAL BUDGET OFFICE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, April 9, 1985.

Hon. DON FUQUA,
Chairman, Committee on Science and Technology, House of Representatives, Rayburn House Office Building, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the attached cost estimate for H.R. 1617, the National Bureau of Standards Authorization Act for Fiscal Year 1986.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,
Sincerely,

RUDOLPH G. PENNER.

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

1. Bill number: H.R. 1617.
2. Bill title: National Bureau of Standards Authorization Act for Fiscal Year 1986.
3. Bill status: As ordered reported by the House Committee on Science and Technology, April 3, 1985.
4. Bill purpose: H.R. 1617 authorizes the appropriation of \$140.0 million for fiscal year 1986, plus such additional sums as may be necessary for adjustments in salary, pay, retirement and other employee benefits, for the activities of the National Bureau of Standards (NBS). In addition, the bill authorizes 1986 appropriations of \$2.8 million for the Office of Productivity, Technology and Innovation (OPTI), \$0.5 million for the National Technical Information Service (NTIS), and \$0.6 million for expenses incurred abroad to be paid in foreign currency. The bill would allow NBS to adjust fees for certain goods and services to cover estimated replacement costs, and would change the compensation of the Director of NBS from Level V of the Executive Schedule to Level IV.

H.R. 1617 would require the Director of NBS to report to the Congress on the status of the recommendations of the President's Private Sector Survey on Cost Control that are within the authority of the Director. The bill would also allow the Director to award up to ten percent of the appropriated funds directly to institutions of higher learning and would establish a Senior Scientists Program at NBS.

Fiscal year 1985 appropriations to date for the activities authorized by the bill are \$127.8 million. The President's 1986 budget requests \$122.5 million for these programs, including \$3.7 million for transfer for working capital.

5. Estimated cost to the Federal Government:

[By fiscal years, in millions of dollars]

	1986	1987	1988	1989	1990
Authorization level:					
Specified (Function 370)	143.9				
Estimated (Function 920)	2.3				
Total	146.2				
Estimated outlays:					
Function 370	98.9	40.7	4.3		
Function 920	2.1	0.2			
Total	101.0	40.9	4.3		

H.R. 1617 would allow NBS to increase fees for certain reference and calibration services to recover replacement costs. NBS would be allowed to use these fees to replace inventories and equipment; any amounts collected in excess of replacement costs would be returned to the Treasury. According to NBS, additional fee collections of approximately \$1 million annually could be collected as a result of this provision, to be used for replacing inventories and equipment.

Basis of estimate: For purposes of this estimate it was assumed that the amounts authorized in the bill for 1986 would be appropriated prior to the beginning of the fiscal year. In addition, pay and other benefit increases of approximately \$2.3 million in 1986 were estimated based on CBO's baseline projections. Outlays reflect historical spending patterns.

The change in the compensation of the Director of NBS would cost less than \$5,000 annually, beginning in fiscal year 1986.

6. Estimated cost to State, and local governments: None.

7. Estimate comparison: None.

8. Previous CBO estimate: On April 8, 1985, CBO prepared a cost estimate for S. 796, as ordered reported on April 2, 1985, by the Senate Committee on Commerce, Science and Transportation. S. 796 specifically authorized 1986 appropriations of \$133.5 million for NBS and other programs, compared to the \$143.9 million authorized by H.R. 1617.

9. Estimated prepared by: Mary Maginniss.

10. Estimate approved by: C.G. Nuckols (for James L. Blum, Assistant Director for Budget Analysis.)

IX. EFFECT OF LEGISLATION ON INFLATION

The anticipated inflationary impact of this legislation has been assessed in accordance with Rule XI, Clause 2(1)(4) of the Rules of the House of Representatives. No inflationary effect on prices and costs in the national economy is expected.

Expenditures by the National Bureau of Standards are, with few exceptions, for basic and applied measurements and standards related research within the Bureau's laboratories.

These enhanced R&D capabilities will encourage expansion of existing links between the Bureau's scientists and laboratories and industry. This will provide for more effective transfer of innovative research findings into the industrial sector. In this manner both national industrial productivity and competitiveness will be improved.

A number of economic studies have directly and indirectly indicated that the contribution of basic and applied research and development and innovation to economic growth, increased productivity, and favorable international trade balances is high. Increased productivity and comparative advantages in international trade are generally regarded as very effective measures in combatting inflation.

While there is a time lag and a degree of uncertainty in the innovation process from the conceptualization of an idea in a research setting to the commercialization of a new product or process, the importance of R&D in the innovation process and its ultimate impact upon industrial productivity cannot be denied. This has been a major premise in the establishment and continued funding of the Bureau.

X. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed *italic*, existing law in which no change is proposed is shown in roman):

ACT OF MARCH 3, 1901

AN ACT To establish the National Bureau of Standards

* * * * *

SEC. 5. That the director shall be appointed by the President, by and with the advice and consent of the Senate. [He] *The Director* shall have the general supervision of the bureau, its equipment, and the exercise of its functions. [He] *The Director* shall make an annual report to the Secretary of Commerce, including an abstract of the work done during the year and a financial statement. [He] *The Director* may issue, when necessary, bulletins for public distribution, containing such information as may be of value to the public or facilitate the bureau in the exercise of its functions. *The Director shall be compensated at the rate now or hereafter in effect for Level IV of the Executive Schedule under section 5315 of title 5, United States Code.*

* * * * *

SEC. 12. (a) * * *

* * * * *

(f) The amount of any earned net income resulting from the operation of the fund at the close of each fiscal year shall be paid into the general fund of the Treasury: *Provided*, That such earned net income may be applied first to restore any prior impairment of the fund, and second to ensure the availability of working capital necessary to replace equipment and inventories to the extent provided in advance in appropriation Acts.

* * * * *

SEC. 18. *The Director is authorized to expend such sums, within the limit of 10 percent of appropriated funds, as the Director may deem desirable for awarding research contracts, grants, research fellowships, and enter into other forms of financial relationships with institutions of higher learning within the United States and their faculties and students. The selection of persons to receive such contracts, grants, fellowships, and assistance shall be made on the basis of ability and of the relevance of the proposed work to the mission and programs of the National Bureau of Standards.*

SEC. [18.] 19. Appropriations to carry out the provisions of this Act may remain available for obligation and expenditure for such period or periods as may be specified in the Acts making such appropriations.

TITLE 5, UNITED STATES CODE

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PART III—EMPLOYEES

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Subpart D—Pay and Allowances

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CHAPTER 53—PAY RATES AND SYSTEMS

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Subchapter II—Executive Schedule Pay Rates

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§ 5315. Positions at level IV

Level IV of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

Deputy Administrator of General Services.

* * * * *

Director, National Bureau of Standards, Department of Commerce.

* * * * *

§ 5316. Positions at level V

Level V of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

Administrator, Agricultural Marketing Service, Department of Agriculture.

* * * * *

【Director, National Bureau of Standards, Department of Commerce.】

* * * * *

ACT OF SEPTEMBER 9, 1950

AN ACT To provide for the dissemination of technological, scientific, and engineering information to American Business and industry, and for other purposes.
PURPOSES.

* * * * *

CLEARINGHOUSE FOR TECHNICAL INFORMATION

SEC. 2. The Secretary of Commerce (hereinafter referred to as the "Secretary") is hereby directed to establish and maintain within the Department of Commerce a clearinghouse for the collection and dissemination of scientific, technical, and engineering information, and to this end to take such steps as he may deem necessary and desirable—

(a) * * *

* * * * *

(d) *To acquire capital equipment and inventories from receipts for work or services performed or to be performed under this section.*

* * * * *

XI. COMMITTEE RECOMMENDATION

A quorum being present, the bill was ordered reported on April 3, 1985 by the Committee by a roll call vote of 30 ayes and 6 nays.

XII. ADMINISTRATION VIEWS

The following letter from the Secretary of Commerce accompanied a draft legislative proposal recommended by the Administration. The bill was introduced by Mr. Fuqua, by request, on March 20, 1985 as H.R. 1617.

THE SECRETARY OF COMMERCE,
Washington, DC, February 25, 1985.

Hon. THOMAS P. O'NEILL, Jr.,
Speaker of the House of Representatives,
Washington, DC.

DEAR MR. SPEAKER: Enclosed are six copies of a draft bill—"To authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal years 1986 and 1987, and for other purposes," together with a statement of purpose and need and section-by-section analysis.

We have been advised by the Office of Management and Budget that there is no objection to the submission of this legislation to

the Congress, and that enactment of this legislation would be in accord with the program of the President.

Sincerely,

MALCOLM BALDRIGE,
Secretary of Commerce.

Enclosures.

A BILL To authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal years 1986 and 1987, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Bureau of Standards Authorization Act for Fiscal Years 1986 and 1987."

AUTHORIZATION FOR PROGRAM ACTIVITIES

SEC. 2. There are authorized to be appropriated to the Secretary of Commerce, hereinafter referred to as "the Secretary", to carry out activities performed by the National Bureau of Standards the sums set forth in the following subactivities:

(a) Measurement Research and Standards, \$38,790,000 for fiscal year 1986, and such sums as may be necessary for fiscal year 1987;

(b) Materials Science and Engineering, \$22,580,000 for fiscal year 1986, and such sums as may be necessary for fiscal year 1987;

(c) Engineering Measurements and Standards, \$29,888,000 for fiscal year 1986, and such sums as may be necessary for fiscal year 1987;

(d) Computer Science and Technology, \$5,000,000 for fiscal year 1986, and such sums as may be necessary for fiscal year 1987;

(e) Technical Competence Fund, \$8,532,000 for fiscal year 1986, and such sums as may be necessary for fiscal year 1987; and

(f) Central Technical Support, \$15,211,000 for fiscal year 1986, and such sums as may be necessary for fiscal year 1987.

OFFICE OF PRODUCTIVITY, TECHNOLOGY AND INNOVATION

SEC. 3. In addition to the sums authorized to be appropriated by this Act, there are authorized to be appropriated to the Secretary, \$1,762,000 for fiscal year 1986 for the activities of the Office of Productivity, Technology and Innovation.

NATIONAL TECHNICAL INFORMATION SERVICE

SEC. 4. Section 2 of the Act of September 9, 1950, c. 936, 64 Stat. 823 (15 U.S.C. § 1152) is amended—

(a) by inserting after the word "reproductions," in subsection (b) thereof the words "without regard to section 501 of title 44, United States Code,"; and

(b) by inserting at the end thereof the following:

"(d) To acquire capital equipment and inventories from receipts for work or services performed or to be performed under this section."

SEC. 5. In addition to the sums authorized to be appropriated by this Act, there are authorized to be appropriated to the Secretary, \$537,000 for fiscal year 1986, and \$502,000 for fiscal year 1987 for the patent licensing activities of the National Technical Information Service.

AVAILABILITY OF APPROPRIATIONS

SEC. 6. Appropriations made under the authority provided in this Act shall remain available for obligation, for expenditure, or for obligation and expenditure for such periods as may be specified in the Acts making such appropriations.

COST RECOVERY AUTHORITY

SEC. 7. Section 12(f) of the Act of March 3, 1901, as amended (15 U.S.C. § 278(f)) is amended by inserting immediately before the period at the end thereof the following "and second to ensure the availability of working capital necessary to replace equipment and inventories to the extent provided in advance in appropriations Acts".

SEC. 8. The effective date of section 7 of this Act shall be October 1, 1984.

STATEMENT OF PURPOSE AND NEED

The National Bureau of Standards (NBS) is the Nation's oldest national laboratory and lead agency for measurement science and standards. It was created by the Act of March 3, 1901 (Pub. L. No. 56-177; 15 U.S.C. §§ 271-278h) ("Organic Act"), which authorized the Secretary of Commerce to undertake a variety of functions, including: the custody, maintenance, and development of the Nation's standards of physical measurement and provision of means and methods for making measurements consistent with these standards; the determination of physical constants and properties of materials; the development of methods for testing materials, mechanisms, structures, supplies and equipment; cooperation with other Federal agencies and the private sector in the establishment of standard practices; the provision of advisory services to government agencies on scientific and technical problems; and the invention and development of devices to serve special national needs.

The authorization for appropriations for NBS expired on September 30, 1983. This included authorization for funding for activities performed under the Organic Act and other statutes such as the Standard Reference Data Act (Pub. L. No. 90-396, as amended; 15 U.S.C. §§ 290-290f). It also authorized appropriations for fiscal year 1983 for research, development and related activities in the fields of innovation and productivity under the direction of the Assistant Secretary of Commerce for Productivity, Technology and Innovation.

This draft bill would authorize appropriations to the Secretary of Commerce for fiscal year 1986 and 1987 for the activities of NBS,

and for fiscal year 1986 for the Office of Productivity, Technology and Innovation. It also would amend the organic legislation of the National Technical Information Service (NTIS) with regard to NTIS' use of its trust funds in the U.S. Treasury, and would provide NTIS with authority to procure printing services at the most cost effective basis.

SECTION-BY-SECTION ANALYSIS

Section 1 provides that this bill may be cited as the "National Bureau of Standards Authorization Act for Fiscal Years 1986 and 1987."

Section 2 authorizes appropriations to the Secretary of Commerce for subactivities of the National Bureau of Standards (NBS). Subsection (a) authorizes \$38,790,000 for fiscal year 1986 and such sums as may be necessary for fiscal year 1987 for Measurement Research and Standards. Subsection (b) authorizes \$22,580,000 for fiscal year 1986 and such sums as may be necessary for fiscal year 1987 for Materials Science and Engineering. Subsection (c) authorizes \$29,888,000 for fiscal year 1986 and such sums as may be necessary for fiscal year 1987 for Engineering Measurements and Standards. Subsection (d) authorizes \$5,000,000 for fiscal year 1986 and such sums as may be necessary for fiscal year 1987 for Computer Sciences and Technology. Subsection (e) authorizes \$8,532,000 for fiscal year 1986 and such sums as may be necessary for fiscal year 1987 for the Technical Competence Fund. Subsection (f) authorizes \$15,211,000 for fiscal year 1986 and such sums as may be necessary for fiscal year 1987 for Central Technical Support. These items include NBS' Organic Act activities and NBS' activities under other statutes, such as the Standard Reference Data Act.

Section 3 authorizes an appropriation to the Secretary of Commerce of \$1,762,000 for fiscal year 1986 for the activities of the Office of Productivity, Technology and Innovation (OPTI). The Administration proposes to eliminate the activities of OPTI by the end of fiscal year 1986. The Department may provide for a small executive staff to advise the Secretary on technology and innovation issues after September 30, 1986. These activities will be carried out pursuant to existing authority of the Secretary for developing and promoting the foreign and domestic commerce of the United States.

Subsection 4(a) provides the National Technical Information Service (NTIS) with authority to procure printing services at the most cost effective rate.

Subsection 4(b) clarifies the authority of NTIS to purchase equipment and inventories from receipts for work or services performed or to be performed by NTIS.

Section 5 authorizes an appropriation to the Secretary of Commerce of \$537,000 for fiscal year 1986, and \$502,000 for fiscal year 1987 for the operation of NTIS' patent licensing program.

Section 6 specifies that funds appropriated under this Act shall remain available for obligation, for expenditure, or for obligation and expenditure for the periods of times specified in appropriations Acts. If an appropriation bill provides for other than single-year availability, it is subject to a point of order unless an authorization

act providing a multiple-year or no-year authorization was previously enacted. This section assures NBS of the availability of appropriated funds for expenditure for its research programs and provides the necessary flexibility for NBS' administration of its scientific and engineering research programs.

Section 7 amends the NBS Working Capital Fund (WCF) (15 U.S.C. § 278b) to provide that, before earned net income from NBS's activities and operations is paid into the general fund of the Treasury, such income may be used to ensure that working capital is available to replace items of equipment and inventory to the extent provided in advance in appropriations Act.

The WCF was established by the Deficiency Appropriation Act of 1950 (Pub. L. No. 81-583) as a special deposit account to provide NBS with fiscal management capability. All NBS' operating expenses (including costs of replacing equipment and inventories) are paid from the fund, which is reimbursed from NBS' appropriated funds or from fees paid by private sector and government agency users of NBS' services and inventories.

Under existing authority, while earned net income must be turned into the general fund of the Treasury, it may be used first to restore any "prior impairment" of the WCF. "Prior impairment" does not include all costs involved with replacing the item (such as costs for inflation) but only the original investment in the item. Because replacement costs exceed the original investment costs, the amounts recovered by the WCF are insufficient to replace equipment and inventories. NBS therefore must periodically request additional appropriations from the Congress in order to maintain its equipment and inventories levels. By permitting NBS to use earned net income to replace equipment and inventories, within the next five years, this section could result in savings in appropriations—and thus savings of the Federal government—in excess of several million dollars.

For example, in the case of Standard Reference Materials (SRMs), NBS could avoid the need for additional appropriations by collecting and reinvesting the difference between historical production cost and current replacement cost as units are sold. NBS provides gold SRMs certified as to purity. The gold used in the samples was acquired by NBS at \$35 per ounce, before the gold market was permitted to fluctuate as a function of market demand. Recognizing that speculators could buy out the NBS inventory and profit through resale at \$400-\$500 per ounce, NBS raised the selling price of its gold SRMs to reflect the market value of gold. The proceeds, however, were returned to the Treasury as a "profit." This proposed legislation allows NBS to retain the current market charges or value of equipment to put toward replacement of its equipment and inventories.

Section 8 provides that the effective date of section 7 of this Act shall be October 1, 1984.

XIII. ADDITIONAL VIEWS TO H.R. 1617

NBS AUTHORIZATION FOR FISCAL YEARS 1986 AND 1987

We did not support H.R. 1617 as it was reported by the Committee on Science and Technology. While we share the Committee's view that the National Bureau of Standards is a very important Federal agency that makes a substantial contribution to the Nation's economic well-being, we believe that an authorization figure at the level requested by the President would have been more appropriate.

H.R. 1617 provides for an authorization for NBS which is 16.9 percent over the President's request for the Bureau for fiscal year 1986 and 12.7 percent over the amount actually appropriated for NBS in fiscal year 1985. In either case, we do not see any justification which can be made for providing such an excessive authorization for NBS for fiscal year 1986. As all of our colleagues know, we are facing some very difficult choices in this Congress in an attempt to whittle down the budget deficit that is currently estimated to be somewhere in the vicinity of \$200 billion. In our effort to restore fiscal responsibility within the Federal government, many important programs and agencies are being asked to take substantial cuts in their budgets and, in some cases, even face elimination. We do not believe that the relatively small budget sacrifice that NBS is being asked to make this year is so critical that it cannot be sustained. In fact, the higher authorization level being proposed is, at best, counterproductive. We feel it is important to draw the line against increased authorizations whether they be large or small, and we intend to do so on this authorization for NBS.

In 1984, a majority of House Members supported a similar effort to reduce the authorization for the National Bureau of Standards to a reasonable level. In that instance, the excess above the Administration's requested level was far less than the 16.9 percent we find in H.R. 1617. We ask once again for your support in bringing this authorization within the budget request.

JOE BARTON.
ROBERT C. SMITH.
BILL COBEY, Jr.
BOB WALKER.
DAVID S. MONSON.
D. FRENCH SLAUGHTER.

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